We Claim:

1. A method for correcting local loading effects during etching of photomasks, which comprises the following steps:

determining a location-dependent density of mask structures resulting in a structure density;

determining a location-dependent strength of a loading effect with an aid of the structure density; and

determining location-dependent correction values for the mask structures using the location-dependent strength of the loading effect for compensating for the loading effect.

2. The method according to claim 1, which further comprises determining the location-dependent density of the mask structures by analyzing a location-dependent bright field proportion of a mask surface that is to be generated.

3. The method according to claim 1, which further comprises:

forming a density function d(x,y) for determining the location dependent density of the mask structures; and

determining the location-dependent strength of the loading effect by a convolution of the density function with a Gauss function.

4. The method according to claim 3, which further comprises determining a location-dependent shift of edges of the mask structures with an aid of the location-dependent strength of the loading effect, the location-dependent correction values compensating for the location-dependent shift of the edges of the mask structures.

5. The method according to claim 4, which further comprises using an equation for the location-dependent shift of the edges at point (x,y) on the mask surface being:

$$s(x,y) = m(t_0 - p_\sigma(x,y)),$$

whereby $p_\sigma(x,y)$ is a density pseudo-function, and model parameters σ, m and t_0 are determined with an aid of measurements of uncorrected masks.

6. The method according to claim 5, which further comprises calculating the density pseudo-function $p_\sigma(x,y)$ by convolution of the density function d(x,y) of the mask structures with the Gauss function of a range σ.

7. The method according to claim 5, which further comprises determining the location-dependent correction values by use of a correction function formed by inverting a sign of m from a function s(x,y).

8. The method according to claim 1, which further comprises:

partitioning a mask surface into subregions; and

assigning a location-dependent correction value to each of the subregions.

9. The method according to claim 8, which further comprises creating a table for allocating the location-dependent correction value to each of the subregions.

10. A data processing system for configuring a layout of a mask, comprising:

means for reading design data representing a mask layout including mask structures to be fabricated and for processing the design data for correcting the mask layout represented by the design data, said means programmed to:

determine a location-dependent density of the mask structures resulting in a structure density;

determine a location-dependent strength of a loading effect with an aid of the structure density; and

determine location-dependent correction values for the mask structures using the location-dependent strength of the loading effect for compensating for the loading effect.

11. A data processing system for configuring a layout of a mask, comprising:

means programmed to:

read first design data representing a mask layout including mask structures to be fabricated;

process the first design data for determining a location-dependent density of the mask structures resulting in a structure density;

determine a location-dependent strength of a loading effect with an aid of the structure density;

determine location-dependent correction values for the mask structures with an aid of the location-dependent strength of the loading effect; and

generate second design data representing the mask layout, which has been corrected with the aid of the location-dependent correction values, of the mask that is to be fabricated.

12. A computer program for configuring a layout of a mask and correcting mask structures: comprising:

computer executable instructions for carrying out the method according to claim 1.